

Image-Pro Features

CAPTURE, PROCESS, MEASURE, CLASSIFY, ANALYZE, REPORT
AUTOMATE, CUSTOMIZE

*CAPTURE

The 2D Capture Module is an Image-Pro 10 principal image capture and video recording component, designed for streaming live previews, acquiring movies, and capturing still images from digital cameras and frame grabbers. Capturing images with the right depth of field, magnification, exposure, and with the right amount of contrast can be difficult, but this module delivers all of the tools able to accomplish this and much more.

Check website for supported cameras . . .

This robust companion module contains a variety of specialty capture options such as:

High Dynamic Range (HDR) capture

Live Tiling

Live Extended Depth of Field (EDF)

Single-frame & movie acquisition

Streaming to disk

Instant acquisition

Crosshair grid overlay

TWAIN acquisition

Live Measurements

Live Image Comparison

Live Calibrated Crossover Grids

Multiple Image formats supported,

Check website for supported formats.

PROCESS

One-click Color Composite

Build composite color images by simply right-clicking on each grayscale image to select a color tint.

Extract and Merge Channels

Easily combine and separate images into RGB, HSI, and HSL color channels.

Color composite

Pseudocolor

Image math

Frame averaging

Image Correction

Correct your image background to better distinguish image objects, improving the downstream measurement operations and reducing false positives.

Image Filters

Remove background noise and reveal hidden details with an extensive set of image processing filters. Preview filters on your active image for instant results.

HDR Post process

Capture a sequence of images at different exposures, with variable options, and combine them into a single High Dynamic Range image. The resulting image is a compilation of image data using the widest possible range of dark to light pixels. No more black or saturated pixels.

Post-acquisition tiling

Fast Fourier Transform

Alignment & EDF

Correct for microscope shift with post-acquisition auto-alignment tools. Extended Depth of Focus (EDF) creates a focused image from a series of images captured at different z

planes.
Auto trace and magic wand
ROI inverse (donut ROI)
Batch-process folders of images
Grid tool

MEASURE

Automatic and Manual Measurements

SEGMENT - Identify what you want to measure

Histogram Segmentation (Grey Scale or Color Thresholding)

Select a single intensity range

Select multiple intensity ranges (classes)

Select with the picker

Smart Segmentation (Multi-Variable Thresholding)

Select objects and background

Define the recipe parameters

Train over multiple images

Automatically compensate for uneven backgrounds

Select & Classify Objects by Color

COUNT/SIZE - Create object outlines, instantly counted and sized

Filter by Measurement

Choose from a wide number of measurements to filter the entire segmentation group from and apply specific range restrictions (graphically or numerically) that selectively leave your objects of interest for further classification and measurement.

Create object outlines.

Once objects are identified and outlined you can count and measure areas, percent area, regions, intensity values, and more.

Count Number

All discrete, separate objects can be automatically counted within the set range of intensities.

Size and Shape

Automatically measure object area, percent area, perimeter, length & width, radii and feret ratio, etc.

Intensity and Density

Automatically measure object intensity, integrated optical density, density, and intensity over time.

Object Splitting & Merging

It becomes necessary to split touching objects in many images so we've provided both automatic watershed and boundary shape-based splitting techniques as well as a manual point-to-point and polyline-based splitting methods to get the job done.

Object naming and coloring

This makes it easier to keep track of what's what by allowing each object to receive a unique name and color through the editing of the data table. Change a single object or select a large number of objects and change them as a group.

Eliminate objects touching image border

In cases where you only want complete and intact volumes that are not cut off by the image stack's borders you can enable a clean borders setting to ignore these objects.

Fill Holes

The appearance of each object is very important to accurate visualization so parameters for each object are able to be edited including color, transparency, secularity.

Advanced line profile analysis

Manual measurements

Measure live images

Snap-to-edge measurements

Best-fit measurements

Track moving objects

Track merging & fading objects

Measure intensity over time

Auto calibration

Collect data from multiple images

Manually tag objects

CLASSIFY

Separate objects into custom groups by parameter

Single Variable Classification

Define any number of classification bins, set the first and last values of each bin, and assign classes to objects according to the bin ranges. Use any parameter in the measurement list to classify the objects by that "single" variable.

Auto Classification

Define the number of groups to be created, choose all the measurement parameters to be used for the classification, and then apply hierarchical clustering to the objects. Classes will be assigned based on the cluster created by cutting the clustering tree

Learning Classification

Classify objects using multiple parameters based on manually selected reference objects. This is an especially useful technique when you are not certain which parameters to use for the classification, but have some idea of how the objects should appear per class.

ANALYZE

Generate data for making helpful comparisons

Measure Distances Between Objects

Measure one-to-one and one-to-many distances between objects.

Measure Objects within Objects

Analyze parent/child relationships with tools that allow you to automatically measure and group objects within objects.

Sort Counted Objects

Create a new image displaying all counted objects arranged by size.

Analyze the Spatial Distribution of Objects

Measure and Analyze

Calibrate for accuracy

Calibration data is ideally read from the image, however in cases where it does not exist, we offer a variety of options to easily create and apply a calibration to an image

Measure Layer Thickness

Determine the top and bottom edges and allow the software to measure thickness and statistics about longest and shortest lengths.

Measure Line Profile

Draw a variety of lines and shapes for displaying the intensity under the lines as Line Profiles. Apply any number of line profiles and export the graph and data out to Excel or to a custom report.

Measurement tools

Direct and Relative

Extract accurate data from your calibrated images with a wide range of manual and semi-automated measurement tools.

Manual and Auto Tracing

Draw polylines and regions to trace complex objects for you to measure area, perimeter, and length.

Magic Wand Counting

One-click automatic segmentation of the local area based on the pixels clicked. Refine selection with 'Add' and 'Remove'.

Magnetic Snap Measurements

Draw accurate line measurements every time with the Snap Measurement tools.

Simply draw and the measurement will accurately snap along object edges.

Classify measurements

Use different colors, shapes, and custom names to classify and organize your measurement data. Use to organize measurements for greater clarity.

REPORT AND SHARE

Data Management

Extract quantitative data with ease

Annotate

Create snapshot of zoomed image

Create snapshot with overlays

Rename and adjust

Rename objects by clicking and typing in the table. Also arrange all objects by color coded class to see relationships.

Sort and Condense

Sort by measurements and adjust tables to only show the relevant data.

Group and view statistics

Combine classes of similar objects into a custom hierarchy and see statistics per measurement for each grouped class.

Data Collector - Gather data from multiple experiments

Collect data automatically

With the press of a button all the data from your table is compiled into Data Collector. You can even set it up to collect from all images automatically as they are measured.

Keep data linked to images

For a multi-image experiment, collect large clusters of data from each image separately and retain the original links to understand how image groups compare and contrast.

Graph the results

Use a variety of graph types for your data such as 2D and 3D scatterplots, histograms, block charts and lines graphs.

Export Data

Export your data and statistics to Microsoft Excel, File, or the Clipboard for pasting anywhere on your PC.

Send data to reports

Send your data and screenshots to custom designed reports within Image-Pro for fast and easy creation of experiment results.

VIEW

[Surface plot view & movie creator](#)

[Gallery view](#)

[Lock & zoom multiple images](#)

[Full-screen mode](#)

[3D viewer & movie creator](#)

[Slicer view](#)

AUTOMATE

[Record Your Work](#)

Automate your imaging tasks with simple macro recording tools. Play back macros or combine multiple macros to ensure accurate results every time.

[Document Your Steps Using the Audit Trail](#)

Save and document your image processes with the Audit Trail. Document entire sessions as well as steps performed on specific images. Export your audit trail as an XML file or to Microsoft Excel.

[Graphical or Code-Based Macro & App Editing](#)

Macros and apps are easy to edit with Image-Pro Premier's graphical drag-and-drop editing interface. You can also use the code-based editing tools to test, edit, and debug your scripts.

[Create, Download & Share Custom Apps](#)

Image-Pro Premier's custom apps allow you to easily design step-by-step workflows that walk you through your image analysis processes. Download apps from Media Cybernetics' Solutions

***(Now an optional module)**